

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 25

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GILBERT L. McCAULEY,
JAMES E. VAN HOUT and LEE M. DZIEKAN

Appeal No. 97-0759
Application 08/155,564¹

ON BRIEF

Before MARTIN, LEE and TORCZON, Administrative Patent Judges.
LEE, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1 and 3-6. Claim 2 has been canceled. No claim has been allowed.

¹ Application filed November 22, 1993.

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References Relied on by the Examiner

Karl	2,623,142	Dec. 23, 1952
Hagberg	3,169,172	Feb. 9, 1965
Kindred et al (Kindred)	3,629,775	Dec. 21, 1971
Tanaka	5,151,563	Sep. 29, 1992

The Rejections on Appeal

Claims 1, 3 and 4² stand rejected under 35 U.S.C. § 103 as being unpatentable over Karl and Hagberg.

Claim 5 stands rejected under 35 U.S.C. § 103 as being unpatentable over Karl, Hagberg and Tanaka.

Claim 6 stands rejected under 35 U.S.C. § 103 as being unpatentable over Karl, Hagberg, Tanaka and Kindred.

The Invention

The invention is directed to a joystick control structure.
The sole independent claim, claim 1, reads as follows:

1. A joystick control comprising:

a ball having an axis on which a contact stem and joystick stem are aligned, the ball having a spherical portion from which the contact stem extends and a frustoconical portion unitary with and axially aligned with the spherical portion from which the joystick extends;

a housing having a socket therein for receiving the ball;

a frustoconical surface in the housing complementing

The Examiner's Answer incorrectly includes canceled claim 2 in this group of claims.

the frustoconical surface of the ball and being positioned against the frustoconical surface of the ball; and

a resilient member in the form of an O-ring positioned with the socket for engaging the spherical portion and for urging the frustoconical surface of the ball into engagement with the frustoconical surface in the housing whereby the ball is urged to a centered position.

Opinion

The rejection of claims 1 and 3-6 cannot be sustained.

The examiner acknowledges (answer at 4) that Karl does not disclose a spherical portion on a ball structure or a contact stem extending through the spherical portion. The examiner did not state so but it is evident that Karl also does not disclose an O-ring structure engaging the spherical portion of the ball to urge the frustoconical portion of the ball in contact with the frustoconical surface in the housing.

The examiner finds in Hagberg a joystick assembly having a ball structure including a spherical portion and a frustoconical portion and a contact stem extending from the spherical portion through the frustoconical portion. He concludes (answer at 4) that it would have been obvious to one with ordinary skill in the art to modify Karl's joystick head structure 9 by making it in the shape of Hagberg's partly spherical and partly frustoconical

structure with a contact stem protruding therefrom, because both Karl and Hagberg are in the same field of endeavor.

We disagree. Not everything in the same field of endeavor can be interchanged at will. If that were the case, then as long as the prior art references were in the same field of endeavor, we could selectively pick and choose elements from one and place them arbitrarily anywhere in the other without regard to any motivation or reasonable suggestion to do so, which is improper. Here, the most one with ordinary skill in the art would glean from Hagberg is that the head structure 9 might be replaced by the partly spherical, partly frustoconical structure of Karl. We can see no motivation whatsoever for one with ordinary skill in the art to add Hagberg's contact stem to Karl.

In Hagberg, the contact stem as referred to by the examiner is evidently the control pin 45 which has a slightly reduced diameter at one end known as the rounded nib 47. The purpose of the control pin and nib is to make selective contact with the movable blades of the lever arrangement below (Figures 2-4) to move them for causing electrical contact to be made or broken between contact terminals. In Karl, the corresponding electrical connection function is performed by a contact element 17 attached to seat 10 on the opposite end of head structure 9 (see Figures 1

and 2 of Karl). Thus, Hagberg's contact stem or control pin 45 has no apparent operative role in the assembly of Karl. And certainly, of course, Hagberg's contact stem or control pin 45 cannot replace Karl's spring 11. Spring 11 of Karl serves two important functions, one being the forming of an electrical connection from the head structure to a terminal on the bottom of the housing assembly and the other being the center biasing of head structure 9. Hagberg's contact stem 45 is not capable of performing either function since it is an insulator and is evidently substantially thick and rigid (see column 2, line 70 to column 3, line 4). For these reasons, we do not see how one with ordinary skill in the art would be reasonably motivated to employ Hagberg's contact stem in Karl's assembly. Moreover, even if we ignore the lack of a proper contact stem in the examiner's combination of the two references, the examiner's analysis is erroneous for another reason. Independent claim 6 requires an O-ring for engaging the spherical portion of the ball structure to urge the frustoconical surface of the ball into engagement with the frustoconical surface of the housing. Neither Karl nor Hagberg discloses an O-ring for any purpose. The examiner simply states (answer at 8), in a conclusory manner without any supporting evidence:

[I]t is well known in the art of joystick switches that o-rings and springs are interchangeable because both o-rings and springs provide resiliency in order to return a switch to the inactive position and for use in centering a joystick to its neutral position.

The appellants have not claimed simply using an O-ring to return a joystick to the neutral position. Instead, a specific structure is recited wherein the O-ring has to act on the spherical portion of a ball structure so that the frustoconical portion of the ball would be urged into engagement with the complementary frustoconical surface of the housing. The examiner's position, if adopted, would automatically regard as obvious any structure making use of an O-ring to return a joystick to the neutral location. In the answer on page 8, lines 17-21, the examiner clearly indicates his position that the interchangeability of springs and O-rings would render obvious any structure making use of an O-ring to interact with the surface of a joystick "whatever [is] the shape of the surface."

The examiner's view is without merit and unsupported by evidence in the record. The position is over-inclusive. There are a myriad of ways an O-ring may be made to interact with a whole variety of different structures and surfaces. It cannot be presumed that all such interactions would have been obvious to one with ordinary skill in the art. To make out a prima facie

case of obviousness, the examiner has to provide supporting evidence and a logical explanation why one with ordinary skill in the art would be motivated to make the required structure. Here, the examiner has provided no evidence that O-rings were well known to provide biasing, let alone biasing of the specific ball structure recited in claim 1, and much less in the manner as recited in claim 1.

Claims 5 and 6 each depend indirectly from claim 1 and thus each include all features of independent claim 1. Tanaka was relied on by the examiner to meet the additional feature recited in claim 5, and Kindred was relied on by the examiner to meet the additional feature recited in claim 6. Thus, neither Tanaka nor Kindred, as applied by the examiner, makes up for the deficiencies of Karl and Hagberg.

Accordingly, the rejections of claims 1 and 3-6 cannot be sustained.

Conclusion

The rejection of claims 1, 3 and 4 under 35 U.S.C. § 103 as being unpatentable over Karl and Hagberg is reversed.

The rejection of claim 5 under 35 U.S.C. § 103 as being unpatentable over Karl, Hagberg and Tanaka is reversed.

The rejection of claim 6 under 35 U.S.C. § 103 as being

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unpatentable over Karl, Hagberg, Tanaka and Kindred is reversed.

REVERSED

JOHN C. MARTIN)	
Administrative Patent Judge)	
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JAMESON LEE)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
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RICHARD TORCZON)	
Administrative Patent Judge)	

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